Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Marathon Oil Company.
Well Name/Number: Raymond Sveet 31-29H
Location: NW NE Section 29 T31N R59E
County: Sheridan**, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 25-35 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick drilling rig, to drill to 19,780'MD/9,951'TVD single lateral Bakken Formation test well.
Possible H2S gas production: Yes, slight chance of H2S gas, Mississippian Formations.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

_X_ Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: Drill a 19,780'MD/9,951'TVD single lateral Bakken Formation test well. If no gas gathering system exists nearby sweet gas and/or H2S gas can be flared under Board Rule 36.22.1220. No concerns.

Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole will be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with brine water. Surface casing hole will be drilled with freshwater and freshwater mud system.
High water table: No high water table anticipated, in the area of review.
Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to Brush Mountain Creek, about 1/32 of a mile to the east from this location.
Water well contamination: None, closest water wells are further than 1 mile in any direction from this location. Surface hole will be drilled with freshwater to 1950'. Surface casing will be run and cemented to surface.
Porous/permeable soils: No, silty sandy clay soils.
Class I stream drainage: No, Class I stream drainages.

Mitigation:

_X_ Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
_X_ Other: Semi closed loop mud system to be used. Oil based invert drilling fluids will be recycled. Cuttings will be mixed with fly ash and buried in the lined cuttings pit.

Comments: 1950' of surface casing will be necessary to cover the base of the Fox Hills

aquifer.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated.
High erosion potential: No, location requires a small cut, up to 9.1' and a small fill, up to 6.5', .required.
Loss of soil productivity: Slight.
Unusually large wellsite: No, a very large well site 400'X500', single well location pad.
Damage to improvements: No, location to be restored after drilling, if nonproductive. If productive unused portion of the drilling pad will be reclaimed.
Conflict with existing land use/values: Slight, surface use is grassland.

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access will be over existing county gravel road, Brush Mountain Road. An access road off the existing county road into this location will be built. Estimated new road length is about 2890' into the location. Cuttings will be mixed with fly ash and dumped in the lined cuttings pit. Cuttings pit will be backfilled when drilling is completed. Drilling fluids will be recycled or hauled to a Class II disposal. Completion fluids in the reserve pit will be hauled to a commercial Class II disposal.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No, residences 1 mile in any direction from this location. The town of Medicine Lake, Montana lies about 20 miles to the west northwest and Dagmar, Montana lies 11.9 miles to the northwest from this location.
Possibility of H2S: Slight chance of H2S, Mississippian Formations.
Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:
X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____
Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge is about 10.5 miles to the west from this location.
Proximity to recreation sites: Medicine Lake National Wildlife Refuge is about 10.5 miles to the west from this location.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Threatened or endangered species listed on the Region 6 USFW website are the Piping Plover and Whooping Crane. Candidate species is the Sprague's Pipit. NH Tracker website lists two (2) species of concern as follows: Burrowing Owl, and Whooping Crane. NH Tracker website lists two (2) Potential species of concern as follows: Chimney Swift and the Tennessee Warbler.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private surface land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: None identified .

Mitigation
__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____

Comments: Private surface land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: No concerns

Remarks or Special Concerns for this site

This will be an 19,780'MD/9,951'TVD single lateral Bakken Formation test well.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected from the drilling of this well. Some short term impacts will occur, but will be mitigated in time.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: May 4, 2012
Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells in Sheridan County
(subject discussed)
May 4, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Sheridan County, Montana
(subject discussed)
May 4, 2012

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3, Location T31N R59E
(subject discussed)

May 4, 2012
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____